NÜVE SANAYİ MALZEMELERİ İMALAT VE TİCARET A.Ş.

OT 020

BENCH TOP STEAM STERILIZER

USER'S MANUAL

CE 0473

NÜVE
SANAYİ MALZEMELERİ
İMALAT VE TİCARET A.Ş.

Esenboğa Yolu 22 km
Akyurt - ANKARA / TURKEY
Tel : (00 90 312) 399 28 30 (3 lines)
Fax : (00 90 312) 399 21 97
e-mail: sales@nuve.com.tr

WARRANTY CERTIFICATE

Nüve warrants that the equipment delivered is free from defects in material and workmanship. This warranty is provided for a period of two years. The warranty period starts from the delivery date.

Warranty does not apply to parts normally consumed in operation, current maintenance and the adjustments described in the operating instructions provided with the equipment.

Nüve does not accept any liability in the case where the goods are not used in accordance with their proper intent.

The warranty may not be claimed for damages incurred during the shipment, for damages resulting from improper handling or use, the defects in maintenance, negligence, bad functioning of auxiliary equipment, in the case of force majeure or accident and incorrect power supply.

In the event of failure, Nüve shall be under no liability for any injury, or any loss or damage as the result of the failure other than the guarantee conditions.

BEFORE OPERATING THE INSTRUMENT THIS MANUAL SHOULD BE READ CAREFULLY.

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THE VALIDITY OF THE GUARANTEE IS SUBJECT TO THE OBSERVATION OF THE INSTRUCTIONS AND PRECAUTIONS DESCRIBED IN THIS MANUAL.

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1. USE AND FUNCTION

OT 020 steam sterilizer is designed for the sterilization of unwrapped medical or dental instruments and materials used in laboratories with pressurized steam.

The OT 020 steam sterilizer heats up to the temperatures between 110℃ and 140℃ and generates pressurised steam at the same temperatures according to the Pressurized Vessel Principle. The pressurised steam is used to sterilize the samples.

Homogeneous temperature distribution is ensured by means of stainless steel pipe heater in the chamber.

All parts which are exposed to steam and water are made of stainless materials.

Apart from the safety features of the programmable microprocessor control system such as over-pressure and over-temperature control, there are safety thermostat and safety valve to ensure safe working conditions.

Do not operate the steam sterilizer for purposes other than main purpose.

Do not operate the steam sterilizer for purposes other than main purpose. The steam sterilizer is only to be used by authorized people after the user's manual has been read carefully. Only technical personnel can handle the product in case of any failure.

2. TECHNICAL SPECIFICATIONS

2.1. Technical Specifications Table

TECHNICAL SPECIFICATIONS	OT 020
Temperature Range	110 °C / 140 °C
Temperature Sensor	Fe-Const
Control System	Programmable Microprocessor
Temperature Set and Reading Sensitivity	1° C
Sterilization Timer	1-99 minutes
Safety System	3 Kg/cm² safety valve
Power Supply	230 V, 50 Hz
Power Consumption	1500 W
Useful Volume	20 lt
Number of Shelves (standard/maximum)	2/5
Internal Material	Stainless Steel
External Material	Epoxy-polyester Painted Steel
Internal Dimensions (Ø x D)mm	265 x 355
External Dimensions (W x D x H) mm	535 x 615 x 500
Packing Dimensions (WxDxH) mm	635 x 635 x 565
Net / Packing Weight kg	60 / 70 Kg

2.2. General View

Figure 1

1. Lid locking arms
2. Lid
3. Sterilization chamber lid
4. Shelf carrier
5. Water tank discharge tap
6. Manometer
7. Control panel
8. Distilled water filling line
9. Safety valve
10. Power supply inlet with fuse
11. On/Off switch Fuses
12. Water discharge hose with connector (Figure 5)

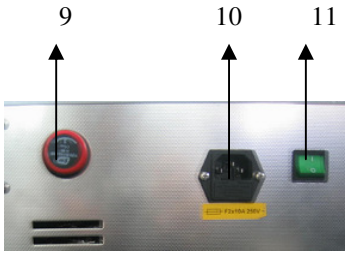


Figure 2

3. INSTALLATION PROCEDURE

3.1. Lifting And Transport

Because of the heavy weight of the instrument, all lifting and transport must be carried out by using proper handling equipment. The instrument must be supported from underneath and never be turned over.

3.2. Contents Of The Package

The package includes :

- 1 piece of user's manual
- 1 piece of power cable
- 1 piece of water discharge hose with connector
- 2 pieces of shelves
- 2 pieces of flywheel arms

3.3. Mains Supply

The steam sterilizer requires 230 V, 50 Hz.

Please make sure that the supplied mains matches the required power ratings. If not, please provide an extra line to support.

Always plug-in the steam sterilizer to correctly grounded sockets.

A supply fitted with a circuit breaker should be used for protection against short-circuit in case of a isolation fault.

3.4. Environmental Conditions

This steam sterilizer is designed to operate safely under the following conditions:

- Indoor use only
- Ambient temperature; 5˚C to 40˚C.
- Maximum relative humidity of 80% for temperature up to 22℃.
- Maximum altitude; 2000 m.
- Temperature for maximum performance; 15ºC / 25ºC

3.5. Positioning

- Check that no damage has occurred during transport.
- Check that the positioning is suitable for users.
- Lift the steam sterilizer (use proper handling equipment if necessary) and carry it to its place. Check that the steam sterilizer is stable on its four pads.
- Check that the user is enable to follow up the sterilization even he deals with something else.
- Leave enough free space on each side of the steam sterilizer.
- Make sure that the sterilizer does not do harm to nearby equipment.
- Open the lid and check that no substance has been left in the sterilization chamber.

3.6. Preparation to Sterilization

3.6.1 Filling In Distilled Water

- Switch on the steam sterilizer.
- If the low water warning led is on fill in some water (the volume of the water tank is 5 liters) until the MAX WATER LEVEL led turns on. Fill the water with the help of a funnel. (See Figure 3)
- Please use only DISTILLED WATER, never use tap water. Any type of water except distilled water may cause expensive and sometimes irreversible damages on the heaters and this case is granted as the failure of proper use.
- **Do not continue filling in water after the MAX WATER LEVEL has turned on.**

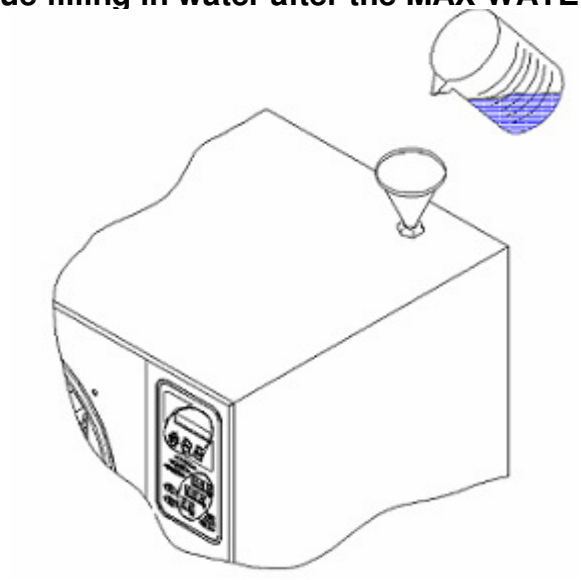


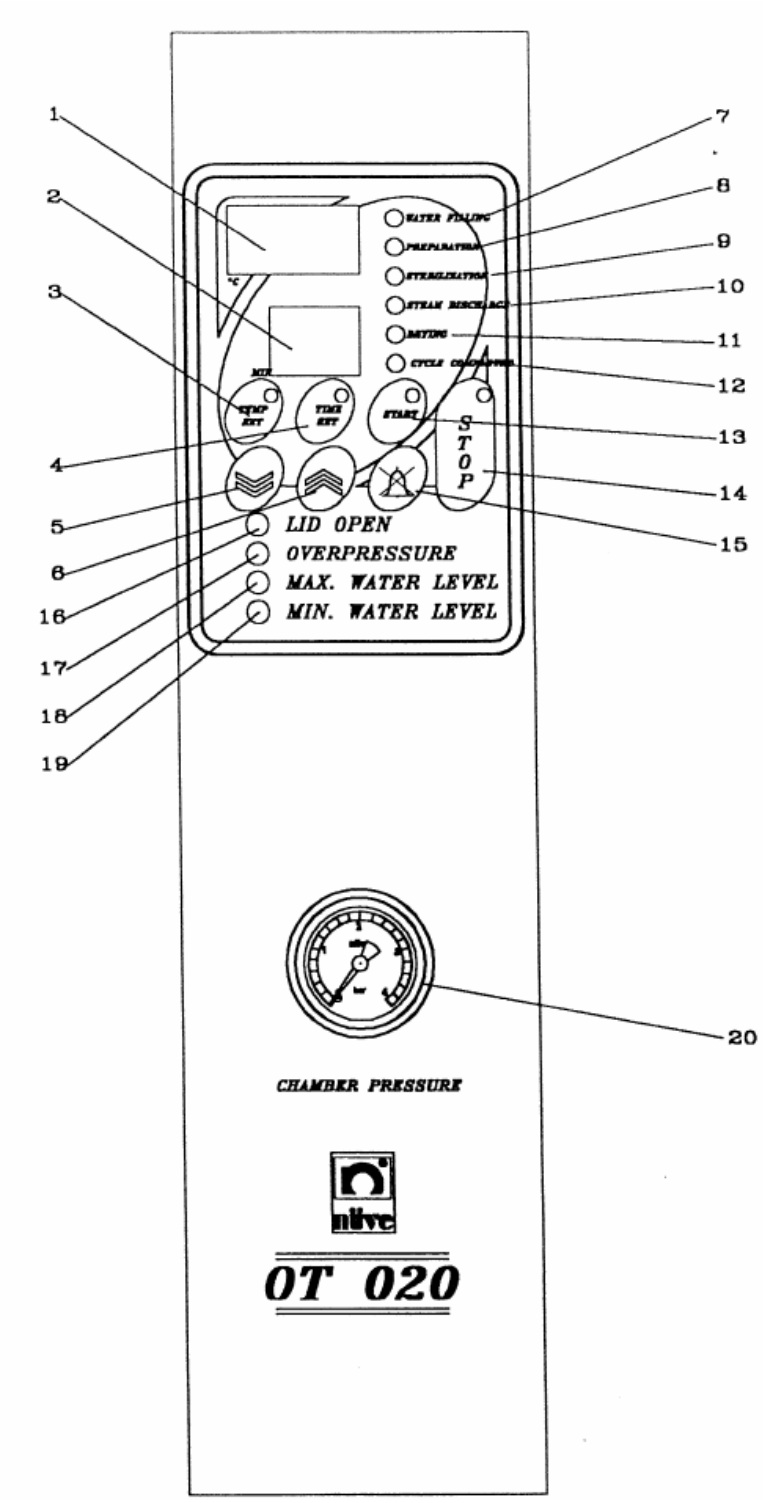
Figure 3

4. OPERATION

4.1. Operating the Steam Sterilizer

- Switch on the steam sterilizer.
- See that the control panel activates.
- Add water if MIN WATER LEVEL led is on. See section 3.6.
- Open the lid by turning the flywheel arms on the counter-clockwise direction and remove the substances left in the chamber, if any exist.
- Load your samples with appropriate sterilization containers obeying the loading conditions, close the lid and tighten it on the clockwise direction until the LID OPEN led turns off.
- Do not load samples which can overflow or get deformed during the sterilization.
- Be sure that the safety valve is closed (turn it on the counter-clockwise direction and hear the closing click).
- Make the program (see section 4.3) and start it.
- Use sterilization indicator for validation of the sterilization.

4.2. Control Panel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WATER FILLING
PREPARATION
STERILIZATION
STEAM RESCH. BAC.
DRYING
CYCLE COMPLETED
TEMP SET
TIME SET
START
STOP
LID OPEN
OVERPRESSURE
MAX. WATER LEVEL
MIN. WATER LEVEL
CHAMBER PRESSURE
nüve
OT 020

01. **Temperature Display (℃):** This is the display where the sterilization chamber temperature and the temperature set values are shown on. It displays the set value during programming and the sterilization chamber temperature any time during the run.

02. **Time Display :** This is the display where the sterilization time is counted down after the set temperature has been reached. It also displays the set value during programming.

03. **Temperature Set Key :** This key is used to set the sterilization temperature. It is also used to check the set value of temperature during the operation.

04. **Time Set Key :** The key is used to set the sterilization time. It is also used to check the set value of time during the operation.

05. **Value Decrease Key :** This key is pushed to decrease the programming values.

06. **Value Increase Key :** This key is pushed to increase the programming values.

07. **Water Filling Led :** This led is on while the chamber is being filled with water autmatically.

08. **Preparation Led :** This led is on until the set temperature is reached. The sterilization does not start while this led is on.

09. **Sterilization Led :** This led is on while sterilization phase is being carried out. The led turns off automatically as the sterilization phase ends according to programmed sterilization time.

10. **Steam Discharge Led :** This led turns on when the steam in the sterilization chamber starts to be discharged. The drying led accompanies this led for the last three minutes of the discharge cycle.

11. **Drying Led :** This led turns on while the drying cycle is being carried out.

12. **Cycle Ended Led :** This led turns on to show that the cycle is completed.

13. **Start Key and Led :** This button is pushed to start the program.

14. **Stop Key and Led :** This button is pushed to stop the program manually.

15. **Audible Alarm Mute Button :** This button is pushed,

- to mute the audible alarms and to cancel the alarm codes,
- to turn off “Cycle Ended” led
- to turn back the sterilizer to the stand-by position from OFF position which occurs after the power cut.

16. **Lid Open Led :** This led is on when the sterilization chamber lid is open or if it is not closed properly. The program doesn’t start until the lid is properly closed.

17. **Overpressure Led :** This led is on when the sterilization chamber pressure exceeds the safety limits. The heating is stopped immediately. Please contact to an authorized technical assistance of Nuve.

18. **MAX WATER LEVEL led :** This led is on when the water level in the tank is at the maximum level. At that time the filling should be stopped. Please do not continue filling in water after this led has turned on.

19. **MIN WATER LEVEL Led:** This led is on when the water in the tank is not sufficient to carry out sterilization.

    If this led is on before the program starts the instrument does not operate until the tank is filled with enough distilled water, if it is on after the program starts the instrument continues to operate but the water in the tank is not enough for the next sterilization.

    See 3.6.1 for detailed water filling information.

20. **Sterilization Chamber Manometer :** This manometer shows the pressure in the sterilization chamber.

4.3. Programming

To set the temperature:

- Push TEMP SET key and see that the green led on the key turns on.
- Set the sterilization temperature by pushing VALUE INCREASE or VALUE DECREASE keys.
- Push TEMP.SET key again to save the set value.

To set the time:

- Push TIME.SET key and see the green led on the button turns on.
- Set the sterilization temperature by pushing VALUE INCREASE or VALUE DECREASE keys.
- Push TIME.SET keys again to save the set value.

Make sure that you have entered correct set points before you start the sterilizer.

4.4. Operation of the Sterilization Cycle

A sterilization cycle consists of the following phases in theOT020 steam sterilizer:

Water Filling : Distilled water in the water tank is pumped into the sterilization chamber.

Preparation : The distilled water taken from the water tank is heated up to the set temperature. The unsaturated steam (the mixture which includes water and steam together) which is generated during heating goes back to the water tank in the form of water periodically.

Sterilization : The sterilization chamber temperature is kept at the set temperature. Unsaturated steam is discharged to the water tank periodically during this cycle.

Steam Discharge : The steam in the chamber is discharged automatically when the sterilization time is over and continues until the chamber pressure drops to zero.

Drying : This phase starts last three minutes of discharge cycle. This cycle ensures that the samples are taken out dry after the sterilization operation.

Cycle Ended : The "Cycle Ended" led turns on and the lid lock is released at the end of the sterilization cycle. Turn the flywheel to the counter clock wise direction, open the lid and take your samples out.

PLEASE SEE THAT THE STERILIZATION CHAMBER MANOMETER SHOWS ZERO (NO PRESSURE) BEFORE YOU ATTEMPT TO OPEN THE LID. IF THE MANOMETER SHOWS A VALUE OTHER THAN ZERO, OPEN THE SAFETY VALVE AND DISCHARGE THE STEAM INSIDE THE STERILIZATION CHAMBER AND THEN OPEN THE LID.

5. CLEANING AND PERIODICAL MAINTENANCE

5.1. Periodical Maintenance

- Replace the sterilization chamber lid gasket once a year. Please contact to the authorized technical service of Nuve for this replacement.
- Change the distilled water in the water tank once a week. (See the figure below)

5.2. Cleaning

- Daily cleaning process is required. Wipe the sterilization chamber gasket and inner surface with a damp cloth. You may use soft liquid soap against difficult dirt and dust.
- Check the chamber before every use. Make the necessary cleaning, if needed.
- Be aware of the adverse effects of the chemicals cleaners and be careful while using them.

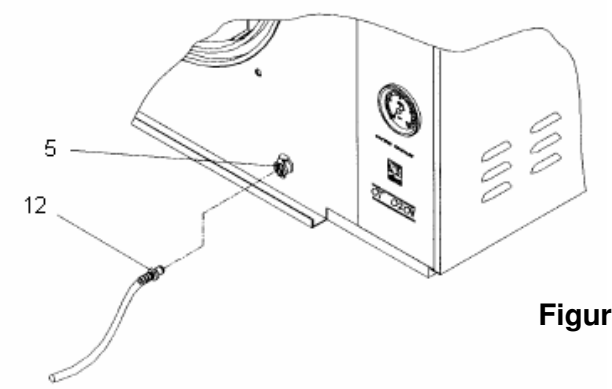

Figure 5

6. TROUBLESHOOTING

The steam sterilizer fails to operate, check that,

- the on/off switch is on,
- the mains supply is present,
- the plug is plugged-in properly,
- the plug is not defective,
- the fuse of the installation on which the plug is mounted is not defective
- the fuses of the instrument are sound.

The steam sterilizer does not heat, check the followings,

- The sterilization temperature is set,
- The program is started.

If the pressure does not rise check that,

- the safety valve is not open.

Error Codes

H01: Thermocouple endings are broken.
H02: There is an electronic fault.
H03: Sterilization chamber temperature has exceeded 141 °C.
H04: Thermocouple endings are connected in reverse.
H06: Water can not be filled into the sterilization chamber.
H07: The temperature does not rise.
OFF: In case of a power cut during the run this error message is displayed, the program is cancelled, the instrument passes to the discharging process since the sterilization cycle is interrupted and the sterilization is invalid.

Please contact to an authorized NUVE service in any case of error!

7. ELECTRICAL CIRCUIT DIAGRAM